

We claim:

- 1 1. A system for real-time command and control of a distributed processing
2 system, comprising:
3 • a high-level control system;
4 • one or more local control systems; and
5 • one or more “worker” processes under the control of each such local
6 control system; wherein,
7 – a task-independent representation is used to pass commands from said
8 high-level control system to said worker processes;
9 – each local control system is interposed to receive the commands from
10 said high level control system, forward the commands to the worker
11 processes that said local control system is in charge of, and report the
12 status of said worker processes that it is in charge of to said high-level
13 control system; and
14 – said worker processes are adapted to accept such commands, translate
15 such commands to a task-specific representation, and report to the
16 local control system in charge of said worker process the status of
17 execution of the commands.
- 1 2. A system having a plurality of high-level control systems as described in
2 claim 1, wherein a job description describes the processing to be performed,
3 portions of said job description are assigned for processing by different high-
4 level control systems, each of said high-level control systems having the
5 ability to take over processing for any of the other of said high-level control

6 systems that might fail, and can be configured to take over said processing
7 automatically.

1 3. A method for performing video processing, comprising:

- 2 • separating the steps of horizontal and vertical scaling, and
- 3 • performing horizontal scaling prior to any of (a) field-to-field correlations,
4 (b) spatial deinterlacing, (c) temporal field association or (d) temporal
5 smoothing.

1 4. The method of claim 3, further comprising performing spatial filtering after
2 both horizontal and vertical resizing.

1 5. A method for performing video preprocessing for purposes of streaming
2 distribution, comprising:

- 3 • separating the steps of said video processing into a first group to be
4 performed at the input field rate, and a second group to be performed at the
5 output field rate;
- 6 • performing the steps of said first group;
- 7 • buffering the output of said first group of steps in a FIFO buffer; and
- 8 • performing, on data taken from said FIFO buffer, the steps of said second
9 group of steps.

1 6. A system for an originating content provider to distribute streaming media
2 content to users, comprising:

- 3 • an encoding platform deployed at the point of origination, to encode a
4 single, high bandwidth compressed transport stream and deliver said

5 stream via a content delivery network to encoders located in facilities at
6 the edge of the network;

- 7 • one or more edge encoders, to encode said compressed stream into one or
8 more formats and bit rates based on the policies set by said content
9 delivery network or edge facility;
- 10 • an edge resource manager, to provision said edge encoders for use, define
11 and modify encoding and distribution profiles, and monitor edge-encoded
12 streams; and
- 13 • an edge control system, for providing command, control and
14 communications across collections of said edge encoders.

1 7. A method for a local network service provider to customize for its users the
2 distribution of streaming media content originating from a remote content
3 provider, comprising:

- 4 • performing streaming media encoding for said content at said service
5 provider's facility;
- 6 • determining, through said service provider's facility, the connectivity and
7 encoding requirements and demographic characteristics of the user; and
- 8 • performing, at said service provider's facility, processing steps preparatory
9 to said encoding, so as to customize said media content, including one or
10 more steps from the group consisting of:
 - 11 – inserting local advertising,
 - 12 – inserting advertising targeted to the user's said demographic
13 characteristics,

- 14 – inserting branding identifiers, performing scaling to suit the user's
- 15 said connectivity and encoding requirements,
- 16 – selecting an encoding format to suit the user's said encoding
- 17 requirements,
- 18 – adjusting said encoding process in accordance with the connectivity of
- 19 the user, and
- 20 – encoding in accordance with a bit rate to suit the user's said encoding
- 21 requirements.

1 8. A method for a local network service provider to participate in content-related
2 revenue in connection with the distribution to user of streaming media content
3 originating from a remote content provider, comprising:

- 4 • performing streaming media encoding for said content at said service
- 5 provider's facility;
- 6 • performing, at said service provider's facility, processing steps preparatory
- 7 to said encoding, comprising insertion of local advertising;
- 8 • charging a fee for the insertion of said local advertising.

1 9. A method for a local network service provider to participate in content-related
2 revenue in connection with the distribution to user of streaming media content
3 originating from a remote content provider, comprising:

- 4 • performing streaming media encoding for said content at said service
- 5 provider's facility;
- 6 • identifying a portion of said content as premium content;
- 7 • charging the user an increased fee for access to said premium content.